Tumorous syphilid

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Abstract

An unusual form of secondary syphilis, characterised by oozing tumours on the forehead and scalp concomitantly with plaques in the genital area, is presented. The patient was diagnosed as having secondary syphilis by dark-field examination, serologic tests for syphilis, and demonstration of spirochetes in the tissues by the immunoperoxidase technique with avidin-biotin peroxidase complex. Treatment with benzathine penicillin led to rapid resolution of the skin lesions one month later. This case of tumorous syphilid, a variant of papular syphilid, which appears not to have been described in the literature previously.

Secondary syphilis has been called the great imitator, because its cutaneous manifestations are so variable. The most common forms are the macular and papular eruptions which occur particularly on the palms and soles. Follicular, papulosquamous syphilid, condyloma latum and annular syphilid are varieties of papular syphilid. There are some rare clinical presentations of secondary syphilis which have been reported. They include patchy "moth-eaten" alopecia, erosive lesions on the buccal mucosa, corymbose syphilid, framboesiform syphilid, pustular syphilid, lues maligna, and early varioliform syphilid.[1] We report a case which we consider to be a variant of papular syphilid.

Case report

A 31 year old man visited our department with skin rashes on the forehead, scalp and genital area. He had had several extramarital sexual contacts with different partners during the last ten years and the last time was one and a half months before attending our department. About one month previously a papule-like rash developed in the external genital area which spread and grew in size to be tumour like. He took medication from a drugstore and the lesion flattened. But fifteen days after development of the lesion in the genital area, new tumours developed on the forehead and scalp respectively and these oozed.

On examination, there were 3 × 4 cm sized erythematous oozing tumours on the forehead (fig 1) and vertex (fig 2), and 4 × 4 cm sized erythematous scaly plaques with yellowish crusts on the dorsal surface of the proximal penile shaft and pubic area. There were no abnormal cutaneous findings on his palms, soles or trunk, or signs of concomitant systemic disease.

Laboratory studies revealed a white blood count of 7,500/mm^3 with 69% segmented forms, 7% bands, 18% lymphocytes, and 4% monocytes; the haemoglobin level was 15·4 g/dl, and there were 240,000/mm^3 platelets. A Westergren erythrocyte sedimentation rate was 12 mm/h. Results of serum protein electrophoresis and immunoglobulin electro-

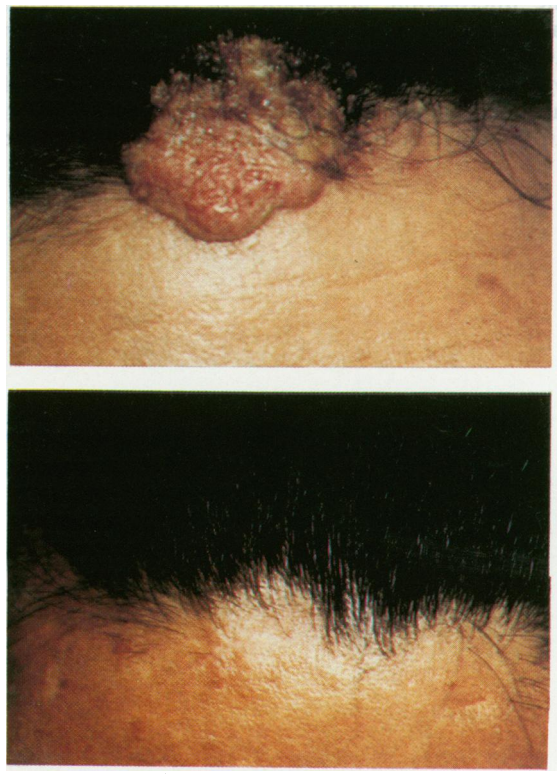

Fig 1 (Upper) 3 × 4 cm sized erythematous oozing tumour on the forehead. (Lower) depressed scar one month after initiation of therapy.

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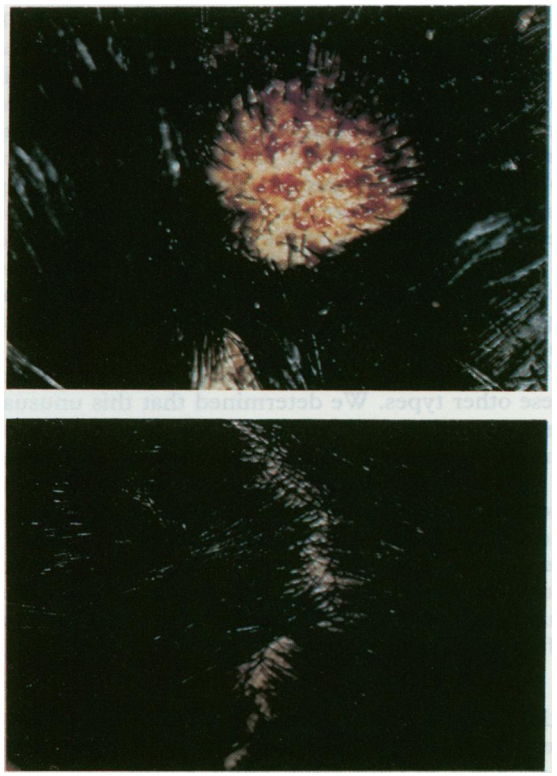

Fig 2 (Upper) 2 × 3 cm sized oozing tumour on the vertex. (Lower) completely resolved state.

phoresis were all within normal limits. An enzyme-linked immunosorbent assay for serum antibody to HIV showed negative result. The bacterial culture from the oozing tumour revealed no growth. Dark-field examination of the tumour on the forehead and the plaque in the public area showed multiple spirochetes. Serologic tests for syphilis showed strong positive reactions: VDRL 1:32; FTA-ABS reactive 4+; TPHA 1:20,480; and 19s(IgM)-FTA 1:1,280. Skin biopsy was performed on the tumour of the forehead. The epidermis showed verrucous hyperplasia. In the upper and mid dermis there was a heavy polymorphic infiltrate with a perivascular and periappendegeal arrangement, composed mainly of plasma cells and eosinophils, and blood vessels showed swelling of the endothelial cells and dilatation (fig 3). This picture was compatible with a syphilid. The Warthin-Starry stain for spirochetes was negative, but the immunoperoxidase stain with avidin-biotin peroxidase complex[2] demonstrated many *T. pallida* in the epidermis (fig 4) and around the dermal blood vessels.

The avidin-biotin-peroxidase complex (ABC) technique was performed according to the published method,[2-4] which is briefly as follows. Four μm sections were cut from the paraffin blocks and

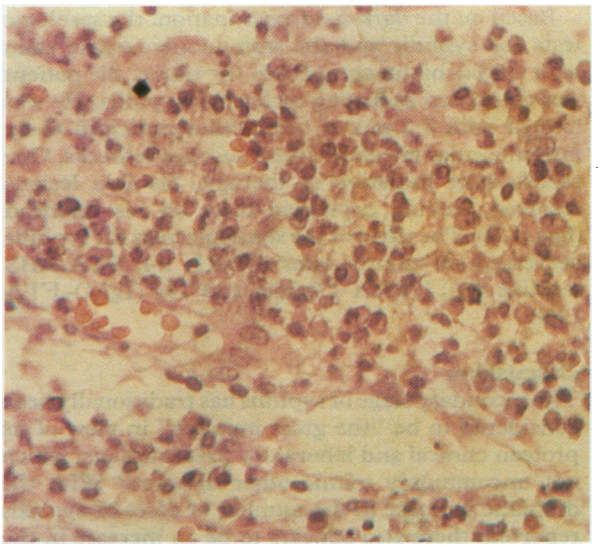

Fig 3 Perivascular infiltrate composed mainly of plasma cells, with swelling of the endothelial cells and dilatation of blood vessels (H & E stain, × 400).

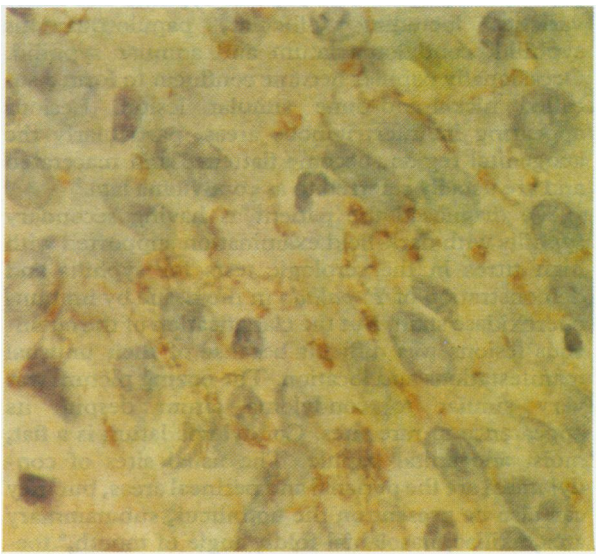

Fig 4 Numerous brownish spiral T. pallida in the epidermis (immunoperoxidase stain with avidin-biotin peroxidase complex, × 1000).

routinely processed. The following reagents were sequentially applied, with 10-minute wash in phosphate buffered saline (PBS, pH 7·4): absorbed rabbit anti-*T. pallidum* (TPHA $\geqslant$5,120) diluted 1:400 for 20 minutes; biotinylated swine anti-rabbit immunoglobulin (diluted 1:200) for 20 minutes; peroxidase conjugated avidin-biotin-complex for 20 minutes. Visualisation of the reaction product was obtained with diaminobenzidine-H_2O_2 (DAB-H_2O_2).

Based on the dark-field examination, the serologic tests for syphilis and the immunoperoxidase stain with avidin-biotin complex in the tissue, the patient was diagnosed as having secondary syphilis. He was treated with 7·2 mu of benzathine penicillin G by intramuscular injection over 3 successive weeks. One month after initiation of therapy, his skin lesions resolved, leaving depressed scars on his forehead (figs. 1, 2). The titres of the serologic tests for syphilis decreased six months later: VDRL 1:4; FTA-ABS reactive 4+; TPHA 1:2,560; and 19s (IgM)-FTA 1:80.

Discussion

The secondary stage of syphilis has traditionally been considered to be "the great imitator" in view of its protean clinical and laboratory presentations, which not uncommonly mimic other diseases.[5] With the dramatic increase in the number of cases of syphilis reported, there also appears to be an increase in the number of patients with rare clinical presentations of secondary syphilis.[1] The most common cutaneous manifestations of secondary syphilis are macular and papular eruptions. The papular syphilid has many varieties including follicular, papulosquamous syphilid, condyloma latum and annular syphilid. Occasionally papules become confluent to form a so-called nickel-and-dime annular lesion. Lesions appearing in intertriginous areas, particularly the anogenital region, become flattened and macerated and are usually referred to as condyloma lata.[5]

We diagnosed the patient as having secondary syphilis with dark-field examination supported with high titres in the serologic tests for syphilis and demonstration of *T. pallida* in the tissue by immunoperoxidase stain. But the classification of the cutaneous lesions was difficult because of their unusual manifestations and location. The oozing picture was very similar to condyloma latum despite its appearance in rare sites. Condyloma latum is a flat, moist anogenital papule. The usual sites of condylomata are the perianal and perineal areas, but they can also be present on the umbilicus, submammary area, axillae, nasolabial folds, angle of mouth,[6] toe-web,[7] and palm.[8] Extensive forms can exist on the neck, axillae, inguinal folds and inner thighs.[9] Those sites are all flexural areas of the body in which moisture plays an important role in developing condyloma lata. The patient had skin lesions on the forehead and scalp which are glabrous skin; therefore the lesions appearing in this case were not compatible with condyloma lata. Considering the location of the lesions, there have been several reports of secondary syphilis with facial lesions. Most of these were framboesiform syphilid, an entity seldom seen today.[10] In contemporary textbooks on syphilis, as well as in older reports, its classification has not been precisely established. Descriptions range from vegetating, nodular, even tumourous forms with abundant foul secretion to "syphilis cutanea verrucosa" and "framboesiform papules or syphilis cutanea vegetans."[11] Another form appearing on the face was a nodular form mimicking a cutaneous lymphoreticular process in which the nodules appeared markedly prominent, some even being tumourlike.[12] However, the clinical forms in this case were very different from the framboesiform syphilid in which the colour, size, and shape could be described as raspberry-like.[10] Also, the nodular form reported was smaller in size, smooth in surface and had no oozing.

There are many differences between our case and these other types. We determined that this unusual case was tumorous syphilid. This may be a rare variant of papular syphilid; its size is larger than that of nodular syphilid and it can occur also on the face and scalp. Syphilis still has variable manifestations, and a high index of suspicion must be maintained even in the penicillin era. It is important, when considering the aetiology of puzzling cutaneous eruptions, to include secondary syphilis in the differential diagnosis.

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1 Baum EW, Bernhardt M, Sams M, Jr, Alexander WJ, McLean GL. Secondary syphilis: Still the great imitator. *JAMA* 1983; 249:3069–70.
2 Lee MG, Lee WS, Lee JB. Detection of *Treponema pallidum* in tissue by the avidin-biotin-peroxidase complex technique. *Kor J Dermatol* 1989;27:23–28.
3 Hsu SM, Raine L, Fanger H. A comparative study of the peroxidase-antiperoxidase method and an avidin-biotin complex method for studying polypeptide hormones with radioimmunoassay antibodies. *Am J Clin Pathol* 1981; 75:734–8.
4 Hsu SM, Raine L, Fanger H. Use of avidin-biotin-peroxidase complex (ABC) in immunoperoxidase techniques: A comparison between ABC and unlabelled antibody (PAP) procedures. *J Histochem Cytochem* 1981;29:577–80.
5 Fitzgerald F. The great imitator, syphilis. *West J Med* 1982; 134:424–32.
6 Ormsby OS, Montgomery H. *Diseases of the skin.* 8th ed. Philadelphia: Lea and Febiger 1954:1033.
7 Minkin W, Landy SE, Cohen HJ. An unusual solitary lesion of secondary syphilis. *Arch Dermatol* 1967;95:217.
8 El-Rafaie ME. Condyloma lata of the palms: an unusual site. *Br J Venereal Dis* 1980;56:267–8.
9 Shrivastava SN, Sinoh G. Extensive condyloma lata. *Br J Venereal Dis* 1977;53:23–5.
10 Beck MH, Hubbard HC, Dave VK, Haye KR. Secondary syphilis with framboesiform facial lesions. *Br J Venereal Dis* 1981;57:103–5.
11 Lejman K, Starzycki Z. Keratopustular variety of framboesiform syphilis. *Br J Venereal Dis* 1977;53:195–9.
12 Hodak E, David M, Rothem A, Bialowance M, Sandbank M. Nodular secondary syphilis mimicking cutaneous lymphoreticular process. *J Am Acad Dermatol* 1987;17:914–7.